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ABSTRACT

Rasch methodology facilitates effective achievement comparisons to meet evaluation needs at the district, school, classroom, and individual levels. The five-year District Gains Graph developed by the Portland (Oregon) Public Schools charts fall-to-spring achievement gains in basic skills for Grades 3-8, as measured by the Portland Achievement Levels Tests. The gain graph permits longitudinal comparisons of students moving through five grades, and comparisons of students in a given grade across five years. Because of the Rasch model, achievement gains in the district can be measured independently of norm groups. Likewise, at the school level, evaluation can be independent of district norms. That is, because school achievement plots relate students' scores to an equal-interval curriculum scale, each school can demonstrate its own instruction-based achievement gains, even if the average achievement is low for the district. The School Program Evaluation Guide is helpful in evaluating the size of achievement gains. Regression to the mean as it affects pre-post achievement gains can be corrected for. The paper describes goal reports for evaluating achievement in basic skills subgoals as well as a number of available formats for reporting Rasch-scaled achievement data, including those designed by Microsystems for Education and Business, Inc. (LPG)

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# RIDING THE RASCH TIGER

## PART 3: RASCH-BASED EVALUATION
## (Without Regrets or Regression to the Mean)

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# RASCH-BASED EVALUATION

## (Without Regrets or Regression to the Mean)

## Introduction

When appropriately applied, Rasch methodology produces equal-interval scores (Allen & Yen, 1979) which are tied to a curriculum scale. This methodology makes it possible to develop an evaluation system using personalized tests matched to the student's achievement level to make valid comparisons of academic achievement at state, district, school, classroom, and individual level. These comparisons can be more fair than using current publisher tests, because at each organizational level, e.g., a school, comparisons can be made to the previous performance of that group rather than to the performance of other groups which may be dissimilar. George Ingebo (1986) has outlined an extensive list of the comparisons that can be incorporated into an effective evaluation system. Many of these comparisons are only possible using a Rasch-based evaluation system. Most important, Rasch methodology makes it possible to develop a longitudinal student data base of achievement test scores obtained from tests aligned to a district's curriculum.

## District Evaluation

### District Evaluation Needs

A school district needs to have at least four kinds of academic achievement information: (a) information to evaluate the effectiveness of the district's overall program of instruction; (b) information to identify students for assignment to special programs such as talented and gifted (TAG), Chapter I, and special education; (c) information to report required evaluation of state and federally supported programs; and (d) information to evaluate both current and new instructional programs. A data base of information is crucial to meet these evaluation needs. At a minimum, every student should be tested at least once, but preferably twice, during the school year.

A Rasch-based evaluation system offers several advantages over other evaluation systems in providing the kind of information a district needs to carry out its evaluative functions. These advantages are: (a) the test scores can be added and averaged because they are equal interval, (b) the scores locate the performance of the district, a school, a class, or a student on the same permanent scale (non population-based) of achievement for a



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given subject such as mathematics or reading, (c) the scores provide comparable data across grade levels and across time, (d) the scores are not affected by re-norming or changes in student averages.

Therefore, a Rasch-based evaluation system makes it possible to evaluate a district's performance across grades and across time on a single scale of academic achievement. This program makes it possible to move beyond the single point in time evaluation to show trends in achievement growth and learning rates. For the first time, it is possible to determine whether the rate of academic achievement is increasing or declining, and to determine the impact of instructional programs across several years and grades.

District Gains Graph

A good example of the innovative use of Rasch methodology to evaluate the effectiveness of a district's instructional program is the Five-Year District Gains Graph developed by Portland Public Schools (1986, August) which shows achievement gains for a given subject across grades three to eight across a five-year period (see Figure 1).

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Insert Figure 1 about here

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Each graph shows the average achievement gain fall to spring for all schools in the district for several grades over five years for a given subject with each year being color coded. Portland Public Schools provides the following information for interpreting these graphs.

[The District Five-Year Gains Graph provides] an overview of the progress of each grade group of students tested on the Portland Achievement Levels Tests (PALT). Each colored indicator (I) provides three pieces of information:

1. the average fall level (the lower horizontal bar) of the grade group;
2. the average spring level (the upper horizontal bar) of the grade group; and
3. the average gain (the connecting vertical bar) of the group.

Using these graphs, it is possible for the district to:

1. compare achievement gains in a subject for students as they move from grades three through eight;
2. compare achievement gains in a subject for students in a given grade across five years in time;

3. compare fall and spring achievement averages in a subject for students as they move from grades three though eight;
4. compare fall and spring achievement averages in a subject for students in a given grade across five years in time; and
5. with a corresponding overlay for a special program, compare performance for students in that program to district-wide performance.

Other comparisons are available. Of those listed above, the most revealing for program evaluation is the first which tracks gain for a group of students over time. Figure 1 shows the actual data for Portland Public Schools for years 1982 to 1986. This graph reveals an upward longitudinal trend in average achievement for each grade across time. The ability to keep this continuous record of achievement gain, regardless of re-norming and changes in the tests, is only possible with a Rasch-based evaluation system.

In the fall of 1985, the district changed testing programs to match district curriculum specifications more closely. Using traditional methodology, it would have been impossible to maintain continuity in the interpretation of test scores. Using Rasch methodology, Portland was able to maintain continuity with past data while it increased the curricular validity of its tests.

The Rasch-based scores in the Portland data base eliminate the discontinuity usually associated with re-norming. Since the means are determined independently of the scaling of a test, growth can be shown independent of any norm group. In fact, it is possible to track upward or downward trends in the norms being used. Therefore, there are no surprises such as those which occur when publishers' tests are re-normed and scores drop or increase precipitously. These graphs are just one of the ways a district can use to report evaluation results obtained from application of Rasch methodology.

To summarize, some major advantages of Rasch methodology in district evaluation are:

1. the ability to compare achievement gains across time;
2. the flexibility to change the testing program to reflect the curriculum and maintain continuity with past data;
3. the ability to measure achievement gain independently of norm groups; and
4. The ability to track changes in norms across time.

## School Evaluation

Schools have evaluation needs that reflect their work with students. These needs include the ability: (a) to determine the effectiveness of the school instructional program; (b) to provide information to group students, to select appropriate instructional strategies, and to balance class loads; (c) to evaluate the impact of special programs; (d) to generate the information needed for instructional planning; and (e) to place students in special programs such as TAG or Chapter I.

### School Achievement Plot

When planning school evaluation, it is especially important to use a fair basis so each school has an equal opportunity to show progress. Unfortunately, the typical evaluation defeats this goal, since it characteristically puts the same schools at the top and at the bottom of the distribution each year regardless of the effort put forth by the staff. Since a Rasch-based evaluation system relates student scores to an equal-interval curricular scale, it is possible to compare gains and to give each school an equal opportunity to demonstrate the impact of their instructional program.

A report which exemplifies this fair evaluation is shown in Figure 2. This plot shows the gain made by students across two points in time so each school can evaluate its instructional program on the basis of the achievement gains made by other schools. This system allows an inner-city school to show superior achievement gains, even though its averages always fall near at the lower end of the distribution for schools in the district. Conversely, a school at the top end of the distribution is challenged to show gain. The standard error bands above and below the regression line indicate gain that is significantly greater or less than expected.

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Insert Figure 2 about here

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For example, the plot shown in Figure 2 indicates that the gain in sixth-grade reading achievement for Kilgore school is significantly greater than the average gain for the district. On the other hand,Trout middle school's gain is lower than the gain for other schools in the district.

The School Achievement Plot in Figure 2 provides a measure of year-to-year achievement gains in a given basic skills area so that a school may:

1. compare its performance with its previous year's performance;
2. make an evaluation of whether its achievement gain is significantly greater or less than the average for the district;
3. compare its gain in achievement to the gains of other schools in the district for two different points in time;
4. make an evaluation of whether its achievement gain relative to that of other schools in the district is above or below students in a similar socio-economic situation; and
5. track its gain across time by comparing plots from year to year.

The analysis provided by this report is made possible by the equal-interval nature of the Rasch scores. The gains shown on the School Achievement Plot are based on the same metric system in the classroom and have a similar meaning for instructional decision-making. Although this plot is similar to those possible using scores available from publishers' standardized tests, The Rasch scores not only provide increased precision but also preserve the meaning and interpretation of the achievement gains.

Goal Reports for Use by Schools

A Rasch-based evaluation system makes it possible to compare academic achievement on each learning goal directly to overall achievement. To take advantage of this feature, the test must be designed with an adequate number of items to assess each each learning goal. The Rasch scores make it possible to measure total achievement and the achievement on each goal on the same scale. Therefore, it is possible to compare average total achievement to average achievement on each learning goal, e.g., compare average achievement in word meaning to total reading and average achievement on whole number operations to total mathematics.

Grade Goal Progress Report

The Grade Goal Progress Report used by Portland Public Schools gives results in standard scores and Rasch units (RITs). This report, shown in Table 1, compares a school's average achievement in each goal area to that for all other schools in the district. The deviations from district-wide achievement averages are given in standard $z$ scores based on fall and spring testing. Also provided is a comparison of the school's growth in achievement for the year in each goal area compared with district growth.

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Insert Table 1 about here

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Goal Comparison Report

A second goal report is shown in Table 2. This report compares the district average (comparison RIT) for a subject, the total average RIT for the school, and the average performance on each goal. To simplify the interpretation, goal averages that are significantly higher or lower than the total are indicated by (HI) or (LO).

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Insert Table 2 about here

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Each of these reports (Tables 1 and 2) has its merits. The Goal Grade Progress Report provides information about how the school is doing compared to other schools in the district. The Goal Comparison Report identifies goals on which performance is significantly higher or lower than the overall performance. Many other kinds of reports are available. It is important to point out that neither of these goal reports would be possible using a traditional publisher's testing program. The curricular scaling of the Rasch scores makes it possible to use a single consistent criterion in evaluating achievement in each goal area.

School Gains Graph

The School Gains Graphs shown in Figure 3 are the school-based parallel of the gains graphs for the district shown in Figure 1. The example provided shows fall to spring achievement gains for one school in three grades for five years for three basic skills areas. Using the information these graphs provide, a school may make the following comparisons:

1. compare performances across several years for a given grade; and subject.
2. Compare performances across several grades for a given year and subject; and
3. Compare performances across several subject matter areas for a given year and grade.

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Insert Figure 3 about here

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Regression to the Mean

Schools are faced with the problem (and opportunity) of evaluating the effectiveness of different instructional programs and strategies. This type of evaluation is

particularly tricky because it is seldom possible to establish control or comparison groups. The problem is compounded by an effect known as regression to the mean. Regression to the mean arises because groups with averages below the population average on the pretest appear to have inflated pre-post gain while groups scoring with averages above the population average appear to have depressed pre-post gain.

The equal-interval nature of the achievement scale developed through Rasch methodology and the resulting increase in precision of measurement makes it possible to adjust for regression to the mean. The graph in Figure 4 shows the magnitude of this effect, fall to spring, in three subjects. In this graph, both axes are marked off in standard P scores with a mean of 50 and a standard deviation of 10. The baseline is for fall scores and the vertical axis is for spring scores. The differences between the solid line and the dotted lines show the amount of regression to the mean.

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Insert Figure 4 about here

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School Program Evaluation Guide

This guide provides a convenient method for evaluating achievement growth across two points in time. The growth in achievement is the standardized z score position of a group on the distribution of mean RIT gain scores for grade groups by school. The School Program Evaluation Guide is based on the distribution of gains across schools for grade groups of 20 or more students and is adjusted for regression to the mean.

To use the Guide, the average gain is computed for a classroom or other group using the difference between the pretest and posttest averages. This value is then compared to the values in the line in the table corresponding to the grade for the group. The comparative gain for the group is then read from the column headings which range from Very Low to Very High. For example, if a sixth-grade reading group had a pretest average of 212.6 RITs and a posttest average of 218.9 RITs, its gain would be 6.3 which is High Average. The Guide has proven to be a convenient tool for schools to use. It provides information about instructional effectiveness based on a single simple table lookup, and it can be done by a teacher anonymously, so it promotes accurate self-evaluation.

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Insert Table 3 about here

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Grade Alphabetic Report

Microsystems for Education & Business, Inc. (M.E.B.) (1986) has designed and field-tested a classroom goal report which provides an alphabetic listing of the performance of students in a class in a given grade (see Table 4). This report lists test results for each student in three subject areas--reading, mathematics, and language. The report gives the test taken (the tests differ in level of difficulty), the raw score, the RIT score, a standard T or "pop" score (to provide a normative comparison), and a rating of the instructional goals covered by the test. This report provides a complete listing of test results for a given testing period.

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Insert Table 4 about here

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Grade Rank Order Goal Report

M.E.B. also provides a report which lists students in rank order of their performance (see Table 5). The summary at the bottom of this report shows the average for the total and each goal and the number of students performing significantly above and below the average for their grade.

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Insert Table 5 about here

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## Classroom Evaluation

The evaluation needs of the district and school should be complemented by classroom evaluation. The needs for classroom evaluation include: (a) monitoring the academic progress of individual students, (b) evaluating the effectiveness of the teaching materials being used, (c) providing a basis for instructional planning by the teacher, and (d) self-evaluation for the teacher of the effectiveness of his or her teaching.

A Rasch-based testing program offers these advantages over traditional testing programs because it provides: (a) continuous achievement data for students on specific learning goals, (b) longitudinal reports of student achievement to share with parents, (c) class averages that enable a teacher to compare current achievement gain with that made in previous years.

Perhaps the evaluation with the greatest impact is that made by the classroom teacher. Achievement test scores and achievement gain provide the kind of information teachers need to evaluate their own effectiveness. Tests designed to provide a single score in relation to a norm group typically reflect an increase over time, even if teaching has been minimal. To measure gain in achievement, one needs a precise curriculum-based measure. Using a Rasch-based evaluation system, it is possible to measure gain and the impact of instruction directly.

School Program Evaluation Guide

This Guide, reviewed above, can also be used by teachers to evaluate the average growth for the class in comparison to district-wide growth.

Three Points in Time Goal Report

Another M.E.B. goal report provides information about each student's performance for three points in time, e.g., fall 1984, 1985, and 1986 (see Table 6). This report is for one subject and the scores include RITs and pop scores. The student's performance on each goal is indicated by letter--A (average), H (high), and L (low). The report also provides class averages to show how this group is progressing through the educational program.

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Insert Table 6 about here

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Individual Student Report

This M.E.B. report covers a single student and shows performance for every time the student has been tested (see Table 7). The report lists the date of each testing, the student's grade in school, test number, raw score, RIT score, pop score, and level of performance on each goal. This report is especially valuable when discussing a student's performance over time with parents.

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Insert Table 7 about here

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Challenges in Installing a Rasch-Based Evaluation System

Rasch-based evaluation requires time and resources, but it is worth the effort. Personnel need to be trained to design tests to fit the curriculum; administer the tests; and process, report, and interpret the results. Administrators need inservice training on how to support the

use of test results to improve classroom instruction and instructional planning. Inservice training needs to be planned for curriculum specialists and teachers who are used to ignoring or "out-lasting" traditional publishers' testing programs. But the introduction of a curriculum-aligned testing program provides the opportunity to help teachers use a better kind of information to help students learn.

One danger is the temptation to evaluate teachers and principals on the basis of Rasch test scores. There is a fine line between evaluating an instructional program and evaluating the person implementing that program. Once that line is crossed, the evaluation system becomes a threat rather than a source of helpful information. Inevitably, the validity of the testing program becomes secondary to the self-interest of the person whose work is being evaluated, and the evaluation is subverted. On the other hand, structuring the evaluation system to give teachers and principals the information they need in a timely manner actually enhances their sense of being in control of the instructional process. Inservice training and honesty with the staff is a prerequisite for an effective evaluation system.

## Strengths of a Rasch-Based Testing Program

This paper has discussed the ways in which a Rasch-based evaluation system can extend and improve education. There are other aspects of Rasch-based evaluation which make the program not only attractive, but essential to education. It provides curriculum related information, so testing can become a tool to provide relevant information for all aspects of planning and instruction. When an evaluation system is no longer a necessary evil, but is an aid to teachers and administrators, it can have a significant positive impact on classroom instruction. With Rasch curricular scaling and a sensitive evaluation system, teachers work to enhance test validity, evaluation is more precise, and the quality of planning is significantly improved. Everybody wins.

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Table 1

GRADE GOAL PROGRESS REPORT

SCHOOL: NUMBER OF STUDENTS 27

SUBJECT: LANGUAGE USAGE GRADE LEVEL 4

| GOALS | FALL 1982 DEVIATION* | FALL 1982 (MEAN RIT FOR GROUP) | SPRING 1983 DEVIATION* | SPRING 1983 (MEAN RIT FOR GROUP) | DIFFERENCE FROM CITY WIDE GROWTH |
|---|---|---|---|---|---|
| 1. SENTENCE AND PARAGRAPH STRUCTURE | 0.68 | (201.1) | 0.51 | (207.3) | -0.17 |
| 2. BASIC GRAMMAR | 0.35 | (198.9) | 0.90 | (210.0) | 0.55** |
| 3. PUNCTUATION | 0.35 | (199.6) | 0.71 | (210.7) | 0.37 |
| 4. CAPITALIZATION | -0.64 | (193.2) | -0.13 | (202.7) | 0.50** |
| 5. SPELLING | 0.64 | (199.7) | -0.24 | (200.8) | -0.87** |
| 6. WRITING | 0.98 | (203.0) | 1.40 | (211.6) | 0.42 |

* SHOWS PERFORMANCE OF THIS GROUP COMPARED WITH THAT OF ALL SCHOOLS IN THE CITY.
THE SCALE RANGES ROUGHLY FROM -3.0 (LOWEST) TO +3.0, WITH 0.0 BEING AVERAGE.

** CHANGE FROM FALL TO SPRING SHOULD BE CONSIDERED IMPORTANT IF IT IS .5 OR MORE DEVIATION UNITS.

Table 2

M.E.B. DEMONSTRATION DISTRICT -- OLSON ELEMENTARY SCHOOL 06/04/86

SCHOOL GOAL ANALYSIS REPORT FALL 1985

| GRADE | SUBJECT | COMPARISON RIT | TOTAL | PERFORMANCE | GOAL 1 WORD MNG | GOAL 2 LIT COMP | GOAL 3 INT COMP | GOAL 4 EVAL COMP |
|---|---|---|---|---|---|---|---|---|
| 7 | READING | 214.1 | 219.6 | VERY HIGH | 214.5 (LO) | 219.1 | 221.4 | 225.3 (HI) |
| 8 | READING | 220.2 | 224.9 | HIGH | 219.7 (LO) | 223.8 | 225.1 | 228.9 (HI) |
| 9 | READING | 224.3 | 228.6 | HIGH | 225.2 (LO) | 228.1 | 228.7 | 229.1 |

| | SUBJECT | COMPARISON RIT | TOTAL | PERFORMANCE | GOAL 1 +-X/WHOLE# | GOAL 2 +-X/FR&DEC | GOAL 3 GEOM/MEAS | GOAL 4 GRPHS/STAT | GOAL 5 WD/PBSOLV |
|---|---|---|---|---|---|---|---|---|---|
| 7 | MATHEMATICS | 216.8 | 223.6 | VERY HIGH | 222.6 | 219.7 (LO) | 224.5 | 225.1 | 215.4 (LO) |
| 8 | MATHEMATICS | 221.7 | 228.4 | VERY HIGH | 226.3 | 223.1 (LO) | 228.2 | 229.6 | 227.4 |
| 9 | MATHEMATICS | 226.0 | 232.7 | HIGH | 230.2 | 225.4 (LO) | 233.2 | 237.6 (HI) | 229.1 |

| | SUBJECT | COMPARISON RIT | TOTAL | PERFORMANCE | GOAL 1 STRUCTURE | GOAL 2 GRAMMAR | GOAL 3 PUNCTUATE | GOAL 4 CAPITALIZE | GOAL 5 SPELLING | GOAL 6 EXPRESSION |
|---|---|---|---|---|---|---|---|---|---|---|
| 7 | LANGUAGE | 212.2 | 215.5 | HIGH AVERAGE | 216.2 | 217.3 | 214.7 | 214.8 | 212.1 (LO) | 213.8 |
| 8 | LANGUAGE | 216.8 | 219.7 | HIGH AVERAGE | 219.3 | 220.2 | 218.2 | 217.8 | 215.3 (LO) | 216.1 (LO) |
| 9 | LANGUAGE | 220.2 | 223.9 | HIGH | 222.8 | 224.3 | 224.2 | 223.7 | 221.0 (LO) | 223.8 |

(HI) AND (LO) NOTATIONS ARE BASED ON THE COMPARISON OF THE RIT FOR EACH GOAL TO THE TOTAL RIT (NOT THE COMPARISON RIT).

Table 3

SCHOOL PROGRAM FALL TO FALL GROWTH EVALUATION GUIDE
EVALUATION DEPARTMENT

Group mean gain for 15 or more students from Fall to Fall for students taking both tests in the same school.

Group Means

Fall RIT MEAN _____

Previous Fall RIT MEAN _____

Growth From Fall to Following Fall _____ Write (or circle) this number in sequence in the proper row below

MATHEMATICS INTERPRETATION GUIDE FOR FALL TO FALL GROUP GROWTH

| Grades | Very Low | Low | Low Average | Average | High Average | High | Very High |
|---|---|---|---|---|---|---|---|
| 4 | 9.8 | 10.9 | 12.0 | 14.2 | 15.3 | 16.4 | |
| 5 | 8.4 | 9.3 | 10.2 | 12.1 | 13.0 | 13.9 | |
| 6 | 4.2 | 5.1 | 6.0 | 8.2 | 9.1 | 10.0 | |
| 7 | 3.3 | 4.1 | 5.7 | 7.0 | 7.8 | 8.6 | |
| 8 | 3.4 | 4.2 | 5.0 | 6.8 | 7.6 | 8.4 | |

READING INTERPRETATION GUIDE FOR FALL TO FALL GROUP GROWTH

| Grades | Very Low | Low | Low Average | Average | High Average | High | Very High |
|---|---|---|---|---|---|---|---|
| 4 | 7.5 | 8.6 | 9.7 | 11.9 | 13.0 | 14.1 | |
| 5 | 6.2 | 6.7 | 7.2 | 8.1 | 8.6 | 9.3 | |
| 6 | 3.4 | 3.9 | 4.4 | 6.3 | 6.8 | 7.3 | |
| 7 | 3.1 | 3.8 | 4.5 | 5.9 | 6.6 | 7.3 | |
| 8 | 4.3 | 4.6 | 4.9 | 5.5 | 5.8 | 6.1 | |

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Table 4

GRADE ALPHABETIC REPORT FOR M.E.B. DEMONSTRATION CENTER GRADE 6 FALL 85 07/23/86

| ID NUMBER | STUDENT NAME | GRD | READING TST | READING RAW SCR | READING RIT SCR | READING POP SCR | READING GOALS | MATHEMATICS TST | MATHEMATICS RAW SCR | MATHEMATICS RIT SCR | MATHEMATICS POP SCR | MATHEMATICS GOALS | LANGUAGE TST | LANGUAGE RAW SCR | LANGUAGE RIT SCR | LANGUAGE POP SCR | LANGUAGE GOALS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0000138427 | ANDERSON DIANA | 6 | 306 | 27 | 224 | 57 | HAAA | 316 | 46 | 228 | 60 | HAAHA | 325 | 35 | 213 | 50 | AAAAAH |
| 0000138199 | BARBEAU ANN MARIE | 6 | 303 | 32 | 199 | 38 | ALLL | 314 | 41 | 203 | 41 | AALLA | 323 | 38 | 196 | 37 | LLAALL |
| 0000138478 | BARTLETT CLIFF | 6 | 306 | 22 | 219 | 54 | AAAA | 315 | 39 | 212 | 48 | HAAAA | 325 | 42 | 218 | 54 | AAAAAA |
| 0000138489 | BOMMER KAREN | 6 | 305 | 27 | 216 | 51 | AAAA | 316 | 35 | 217 | 52 | AAAHA | 326 | 29 | 219 | 54 | AAAHAA |
| 0000136638 | BRANDON JACK | 6 | 305 | 20 | 209 | 46 | LAAA | 315 | 28 | 202 | 40 | ALALA | 325 | 38 | 215 | 51 | AHAAAA |
| 0000138463 | BUCKINGHAM SUSAN | 6 | 305 | 24 | 213 | 49 | AAAA | 314 | 47 | 211 | 47 | AAAAA | 325 | 39 | 216 | 52 | AAAAAH |
| 0000138384 | CANADY ANN MARIE | 6 | 304 | 38 | 220 | 54 | AAAA | 315 | 44 | 217 | 52 | AAAAH | 325 | 34 | 212 | 49 | AAAAAA |
| 0000136567 | CHRISTIE ANDREA | 6 | 305 | 25 | 214 | 50 | AAAA | 316 | 33 | 215 | 50 | AAAAA | 325 | 40 | 217 | 53 | HAAALH |
| 0000137557 | CLARK JIM | 6 | 305 | 30 | 219 | 54 | AAAA | 313 | 46 | 199 | 38 | LLALA | 323 | 51 | 210 | 48 | AAAALA |
| 0000143393 | COLE LINDA | 6 | 303 | 16 | 181 | 25 | LLLL | 314 | 28 | 191 | 31 | LLLLL | 321 | 20 | 165 | 14 | LLLLLL |
| 0000133765 | COLE JACK | 6 | 303 | 30 | 196 | 36 | LALL | 314 | 37 | 199 | 38 | LAALL | 323 | 39 | 197 | 38 | ALALAL |
| 0000138473 | CORTEZ JON | 6 | 307 | 31 | 235 | 66 | HHHH | 318 | 42 | 248 | 76 | HHHHH | 327 | 38 | 233 | 65 | AHHHHH |
| 0000138375 | DOHERTY MAXINE | 6 | 307 | 26 | 230 | 62 | HHHH | 316* | 52 | 241 | 70 | HHHAH | 327 | 38 | 233 | 65 | HAHHHH |
| 0000138484 | DVORAK JAY | 6 | 305 | 27 | 216 | 51 | AAAA | 315 | 41 | 214 | 49 | AAAAA | 326 | 18 | 210 | 48 | AAAAAA |
| 0000138385 | EIDEN SHARON | 6 | 306 | 25 | 222 | 56 | AHAA | 316 | 48 | 231 | 63 | HHHAA | 327 | 31 | 227 | 60 | HAAHAH |
| 0000138487 | FIELDS SALLY | 6 | 307 | 28 | 232 | 63 | HHHH | 317 | 37 | 228 | 60 | AHAHH | 327 | 29 | 226 | 59 | AHAHAH |
| 0000129891 | FORSTER JESSICA | 6 | 306 | 28 | 225 | 58 | AAHA | 316 | 40 | 222 | 56 | AHAAA | 325 | 34 | 233 | 65 | AHHHHH |
| 0000136514 | GARLAND ALLAN | 6 | 305 | 34 | 224 | 57 | AAHA | 314 | 50 | 217 | 52 | HALAA | 326 | 32 | 222 | 57 | AHAAAA |
| 0000137261 | HANSEN LEE | 6 | 305 | 23 | 212 | 48 | AAAA | 316 | 46 | 228 | 60 | HHHAA | 326 | 30 | 220 | 55 | AAAHHL |
| 0000129730 | HOUSER WAYNE | 6 | 306 | 37 | 236 | 66 | HHHH | 316 | 48 | 231 | 63 | HHHAH | 327 | 38 | 233 | 65 | HHHHHH |
| 0000144300 | JENNER JANE | 6 | 305 | 27 | 216 | 51 | AAAA | 314* | 52 | 222 | 56 | HAHLA | 325 | 43 | 219 | 54 | AAAAAH |
| 0000136588 | JOHNSON TOM | 6 | 306 | 33 | 230 | 62 | AHAH | 317 | 45 | 237 | 67 | HHHHH | 327 | 35 | 230 | 62 | AAHHHH |
| 0000128782 | JOHNSON HENRY | 6 | 305 | 17 | 205 | 43 | LAAA | 315 | 47 | 221 | 55 | AHAAA | 323 | 30 | 208 | 46 | AAAAAL |
| 0000138322 | KIEFERT HARRY | 6 | 306 | 30 | 227 | 60 | HAAH | 317 | 41 | 232 | 63 | HHHHH | 326 | 27 | 218 | 54 | AAAAAA |
| 0000138485 | LARUE ANN MARIE | 6 | 307 | 23 | 227 | 60 | AHAH | 316 | 45 | 227 | 60 | AAHHA | 327 | 35 | 230 | 62 | HHAHHH |
| 0000130259 | LARUE JULIE | 6 | 304 | 13 | 189 | 31 | LLLL | 314 | 20 | 184 | 26 | LLLLL | 323 | 44 | 201 | 41 | AAALLA |
| 0000138496 | LASORDA ANN MARIE | 6 | 305 | 18 | 207 | 44 | ALAA | 315 | 35 | 208 | 45 | AAAAL | 325 | 34 | 212 | 49 | AAAAAA |
| 0000133677 | LASORDA GLORIA | 6 | 305 | 22 | 211 | 47 | AAAA | 316 | 37 | 219 | 53 | HAAAA | 326 | 23 | 215 | 51 | AAAAAA |
| 0000136577 | LEFORTH CLIFF | 6 | 305 | 25 | 214 | 50 | AAAA | 314 | 49 | 214 | 49 | AAAAA | 323 | 46 | 203 | 42 | LAAAAA |
| 0000128797 | LOREN JOE | 6 | 303 | 31 | 198 | 37 | ALLL | 313* | 51 | 208 | 45 | ALAAL | 322 | 50 | 198 | 39 | AALLAL |
| 0000136513 | MALONE NONA | 6 | 304 | 29 | 207 | 44 | HLAA | 315 | 44 | 217 | 52 | AAAAA | 325 | 38 | 215 | 51 | AAAHAA |
| 0000138468 | MARKHAM ADRIAN | 6 | 307 | 30 | 234 | 65 | HHHH | 317* | 52 | 251 | 78 | HHHHH | 327 | 37 | 232 | 64 | HHHHAH |
| 0000138245 | MERIWETHER AGATHA | 6 | 304 | 28 | 206 | 44 | AALA | 315 | 32 | 205 | 42 | AALAA | 324 | 28 | 199 | 39 | LLALLA |
| 0000145840 | MERSHON ANDREA | 6 | 301 | 16 | 158 | 7 | LLLL | 313 | 24 | 178 | 21 | LLLLL | 321 | 17 | 163 | 13 | LLLLLL |
| 0000127498 | MILLER ADA | 6 | 305 | 18 | 207 | 44 | LAAA | 313 | 49 | 204 | 42 | AAALL | 324 | 24 | 196 | 37 | LAALLL |
| 0000138303 | MORGAN JANICE | 6 | 305 | 27 | 216 | 51 | AAAA | 316 | 44 | 226 | 59 | HAAAA | 325 | 46 | 222 | 57 | AHHAAA |
| 0000138302 | NEWMAR JANICE | 6 | 306 | 20 | 217 | 52 | AAAA | 316 | 49 | 233 | 64 | HHAHH | 326 | 31 | 221 | 56 | AHAHAA |
| 0000137262 | NEWSOME BRENDA | 6 | 306 | 27 | 224 | 57 | AHAA | 316 | 40 | 222 | 56 | AAAAA | 326 | 40 | 228 | 61 | AHAHHA |
| 0000129681 | NEWSOME PETER | 6 | 306 | 28 | 225 | 58 | HAHA | 317 | 40 | 231 | 63 | HAAHH | 326 | 30 | 220 | 55 | HHAAAA |
| 0000138495 | OTTINGER ESTHER | 6 | 306 | 30 | 227 | 60 | HAAA | 317 | 44 | 235 | 66 | HHHHH | 327 | 30 | 226 | 59 | HHAAHH |
| 0000138466 | PECK JAY | 6 | 307 | 29 | 233 | 64 | HHHH | 315 | 38 | 211 | 47 | AAAAA | 326 | 32 | 222 | 57 | AAHAAA |
| 0000137953 | PETERSON WILSON | 6 | 305 | 26 | 215 | 50 | AAAA | 316 | 37 | 219 | 53 | AAAAA | 327 | 28 | 225 | 59 | AHHAAA |
| 0000129679 | PHILLIPS JANICE | 6 | 306 | 21 | 218 | 53 | HAAA | 317 | 39 | 230 | 62 | HAAHH | 326 | 36 | 225 | 59 | AHHAAH |
| 0000128766 | PICKETT JOHN | 6 | 305 | 18 | 207 | 44 | AAAA | 315 | 32 | 205 | 42 | ALAAA | 324 | 42 | 209 | 47 | AAAAAA |
| 0000131308 | POWELL DIANA | 6 | ABSENT OR INVALID | | | | | ABSENT OR INVALID | | | | | ABSENT OR INVALID | | | | |
| 0000138440 | RUTKIN KAREN | 6 | 307 | 34 | 239 | 69 | HHHH | 317 | 43 | 234 | 65 | HHHHA | 327 | 36 | 231 | 63 | HHHHAH |

Table 4 (continued)

GRADE ALPHABETIC REPORT FOR M.E.B. DEMONSTRATION CENTER  GRADE 6  FALL 85  07/23/86

| ID NUMBER | STUDENT NAME | GRD | READING TST | READING RAW SCR | READING RIT SCR | READING POP SCR | READING GOALS | MATHEMATICS TST | MATHEMATICS RAW SCR | MATHEMATICS RIT SCR | MATHEMATICS POP SCR | MATHEMATICS GOALS | LANGUAGE TST | LANGUAGE RAW SCR | LANGUAGE RIT SCR | LANGUAGE POP SCR | LANGUAGE GOALS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0000137248 | SCOTT LINDA | 6 | 306 | 32 | 229 | 61 | AAAH | 316 | 47 | 230 | 62 | HAAHH | 325 | 45 | 221 | 56 | HAAAAA |
| 0000143902 | SHORES CLARENCE | 6 | 304 | 37 | 218 | 53 | AAAA | 314 | 46 | 209 | 45 | ALAAA | 323 | 53 | 213 | 50 | AAAAAA |
| 0000136033 | SHORES LEE | 6 | 305 | 26 | 215 | 50 | AAAA | 314 | 45 | 208 | 45 | LAAAA | 325 | 39 | 216 | 52 | AAAAHH |
| 0000131114 | SMITH BEV | 6 | 303 | 27 | 193 | 34 | ALLL | 315 | 31 | 204 | 42 | ALLAA | ABSENT OR INVALID | | | | |
| 0000145841 | SMOTHERS RIP | 6 | 304 | 36 | 216 | 51 | HALH | 313 | 47 | 200 | 38 | LLAAA | 323 | 34 | 214 | 51 | AAAAAA |
| 0000137242 | SMOTHERS RICHARD | 6 | 303 | 38 | 208 | 45 | AAAA | 314 | 49 | 214 | 49 | AALAA | 325 | 30 | 209 | 47 | AAAAAA |
| 0000137247 | STEINER GEORGE | 6 | 306 | 24 | 221 | 55 | AAAA | 315* | 53 | 237 | 67 | HAHAH | 326 | 32 | 222 | 57 | HHAAAA |
| 0000138481 | STOCKMAN JACK | 6 | 307 | 23 | 227 | 60 | HHAA | 315 | 44 | 217 | 52 | AHAAA | 327 | 35 | 230 | 62 | AAHHHH |
| 0000138461 | TARDIFF MARY | 6 | 305 | 29 | 218 | 53 | AAAH | 315 | 36 | 209 | 45 | AAAAA | 326 | 31 | 221 | 56 | AAAAAA |
| 0000130236 | THOMPSON JACK | 6 | 305 | 26 | 215 | 50 | AAAA | 315 | 37 | 210 | 46 | AAAAA | 327 | 23 | 221 | 56 | AAHAAA |
| 0000138355 | THORN SALLY | 6 | 306 | 25 | 222 | 56 | AAAA | 316 | 36 | 218 | 52 | AAAAA | 325 | 40 | 217 | 53 | AAAAAA |
| 0000130246 | THORN JON | 6 | 306 | 29 | 226 | 59 | AAAH | 315 | 35 | 208 | 45 | AAAAL | 325 | 32 | 211 | 48 | AAAAAA |
| 0000138493 | TOMPKINS GEORGE | 6 | 304 | 34 | 213 | 49 | AAAA | 314 | 39 | 201 | 39 | ALLAL | 325 | 31 | 210 | 48 | AAAALA |
| 0000137257 | WALTERS ALLAN | 6 | 306 | 33 | 230 | 62 | HHAA | 315 | 49 | 225 | 58 | HAAAA | 326 | 40 | 228 | 61 | HHHAAH |
| 0000130223 | WHITE BRUCE | 6 | 306 | 14 | 211 | 47 | AAAA | 315 | 35 | 208 | 45 | ALAAA | 325 | 32 | 211 | 48 | LAAAAH |
| 0000138491 | WICKHAM JOHN | 6 | 306 | 22 | 219 | 54 | AAAA | 313 | 50 | 206 | 43 | ALAAA | 324 | 42 | 209 | 47 | AAAAAA |
| 0000136431 | WILLIAMS WILSON | 6 | 302 | 24 | 178 | 22 | LLLL | 313 | 38 | 190 | 31 | LLLLL | 323 | 34 | 193 | 35 | LLALLL |
| 0000128779 | WILSON HENRY | 6 | 303 | 33 | 200 | 39 | LAAA | 316 | 41 | 223 | 56 | AHHAA | 321* | 56 | 200 | 40 | ALALAA |
| AVERAGES | | | | | 215.2 | 50.6 | | | | 216.6 | 51.4 | | | | 215.0 | 51.3 | |
| NUMBER ABOVE AVERAGE | | | | | 14 | | | | | 18 | | | | | 12 | | |
| NUMBER AVERAGE | | | | | 40 | | | | | 36 | | | | | 41 | | |
| NUMBER BELOW AVERAGE | | | | | 9 | | | | | 9 | | | | | 9 | | |

* Student score is outside the valid range for this test.

Table 5

GRADE RANK ORDER GOAL REPORT FOR M.E.B. DEMONSTRATION CENTER GRADE 6 FALL 85 MATHEMATICS 07/23/86

| ID NUMBER | STUDENT NAME | GRD | TEST | RAW SCR | RIT SCR | POP SCR | +-X/WHOLE# | +-X/FR&DEC | GEOM/MEAS | GRPHS/STAT | WD/PBSOLV |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0000138468 | MARKHAM ADRIAN | 6 | 317* | 52 | 251 | 78 | HI | HI | HI | HI | HI |
| 0000138473 | CORTEZ JON | 6 | 318 | 42 | 248 | 76 | HI | HI | HI | HI | HI |
| 0000138375 | DOHERTY MAXINE | 6 | 316* | 52 | 241 | 70 | HI | HI | HI | AVG | HI |
| 0000137247 | STEINER GEORGE | 6 | 315* | 53 | 237 | 67 | HI | AVG | HI | AVG | HI |
| 0000136588 | JOHNSON TOM | 6 | 317 | 45 | 237 | 67 | HI | HI | HI | HI | HI |
| 0000138495 | OTTINGER ESTHER | 6 | 317 | 44 | 235 | 66 | HI | HI | HI | HI | HI |
| 0000138440 | RUTKIN KAREN | 6 | 317 | 43 | 234 | 65 | HI | HI | HI | HI | AVG |
| 0000138302 | NEWMAR JANICE | 6 | 316 | 49 | 233 | 64 | HI | HI | AVG | HI | HI |
| 0000138322 | KIEFERT HARRY | 6 | 317 | 41 | 232 | 63 | HI | HI | HI | HI | HI |
| 0000129681 | NEWSOME PETER | 6 | 317 | 40 | 231 | 63 | HI | AVG | AVG | HI | HI |
| 0000138385 | EIDEN SHARON | 6 | 316 | 48 | 231 | 63 | HI | HI | HI | AVG | AVG |
| 0000129730 | HOUSER WAYNE | 6 | 316 | 48 | 231 | 63 | HI | HI | HI | AVG | HI |
| 0000137248 | SCOTT LINDA | 6 | 316 | 47 | 230 | 62 | HI | AVG | AVG | HI | HI |
| 0000129679 | PHILLIPS JANICE | 6 | 317 | 39 | 230 | 62 | HI | AVG | AVG | HI | HI |
| 0000138427 | ANDERSON DIANA | 6 | 316 | 46 | 228 | 60 | HI | AVG | AVG | HI | AVG |
| 0000137261 | HANSEN LEE | 6 | 316 | 46 | 228 | 60 | HI | HI | HI | AVG | AVG |
| 0000138487 | FIELDS SALLY | 6 | 317 | 37 | 228 | 60 | AVG | HI | AVG | HI | HI |
| 0000138485 | LARUE ANN MARIE | 6 | 316 | 45 | 227 | 60 | AVG | AVG | HI | HI | AVG |
| 0000138303 | MORGAN JANICE | 6 | 316 | 44 | 226 | 59 | HI | AVG | AVG | AVG | AVG |
| 0000137257 | WALTERS ALLAN | 6 | 315 | 49 | 225 | 58 | HI | AVG | AVG | AVG | AVG |
| 0000128779 | WILSON HENRY | 6 | 316 | 41 | 223 | 56 | AVG | HI | HI | AVG | AVG |
| 0000144300 | JENNER JANE | 6 | 314* | 52 | 222 | 56 | HI | AVG | HI | LOW | AVG |
| 0000137262 | NEWSOME BRENDA | 6 | 316 | 40 | 222 | 56 | AVG | AVG | AVG | AVG | AVG |
| 0000129891 | FORSTER JESSICA | 6 | 316 | 40 | 222 | 56 | AVG | HI | AVG | AVG | AVG |
| 0000128782 | JOHNSON HENRY | 6 | 315 | 47 | 221 | 55 | AVG | HI | AVG | AVG | AVG |
| 0000133677 | LASORDA GLORIA | 6 | 316 | 37 | 219 | 53 | HI | AVG | AVG | AVG | AVG |
| 0000137953 | PETERSON WILSON | 6 | 316 | 37 | 219 | 53 | AVG | AVG | AVG | AVG | AVG |
| 0000138353 | THORN SALLY | 6 | 316 | 36 | 218 | 52 | AVG | AVG | AVG | AVG | AVG |
| 0000138384 | CANADY ANN MARIE | 6 | 315 | 44 | 217 | 52 | AVG | AVG | AVG | AVG | HI |
| 0000136513 | MALONE NONA | 6 | 315 | 44 | 217 | 52 | AVG | AVG | AVG | AVG | AVG |
| 0000138489 | BOEMER KAREN | 6 | 316 | 35 | 217 | 52 | AVG | AVG | AVG | HI | AVG |
| 0000136514 | GARLAND ALLAN | 6 | 314 | 50 | 217 | 52 | HI | AVG | LOW | AVG | AVG |
| 0000138481 | STOCKMAN JACK | 6 | 315 | 44 | 217 | 52 | AVG | HI | AVG | AVG | AVG |
| 0000136567 | CHRISTIE ANDREA | 6 | 316 | 33 | 215 | 50 | AVG | AVG | AVG | AVG | AVG |
| 0000136577 | LEFORTH CLIFF | 6 | 314 | 49 | 214 | 49 | AVG | AVG | AVG | AVG | AVG |
| 0000137242 | SMOTHERS RICHARD | 6 | 314 | 49 | 214 | 49 | AVG | AVG | LOW | AVG | AVG |
| 0000138484 | DVORAK JAY | 6 | 315 | 41 | 214 | 49 | AVG | AVG | AVG | AVG | AVG |
| 0000138478 | BARTLETT CLIFF | 6 | 315 | 39 | 212 | 48 | HI | AVG | AVG | AVG | AVG |
| 0000138463 | BUCKINGHAM SUSAN | 6 | 314 | 47 | 211 | 47 | AVG | AVG | AVG | AVG | AVG |
| 0000138466 | PECK JAY | 6 | 315 | 38 | 211 | 47 | AVG | AVG | AVG | AVG | AVG |
| 0000130236 | THOMPSON JACK | 6 | 315 | 37 | 210 | 46 | AVG | AVG | AVG | AVG | AVG |
| 0000143902 | SHORES CLARENCE | 6 | 314 | 46 | 209 | 45 | AVG | LOW | AVG | AVG | AVG |
| 0000138461 | TARDIFF MARY | 6 | 315 | 36 | 209 | 45 | AVG | AVG | AVG | AVG | AVG |
| 0000128797 | LOREN JOE | 6 | 313* | 51 | 208 | 45 | AVG | LOW | AVG | AVG | LOW |
| 0000130223 | WHITE BRUCE | 6 | 315 | 35 | 208 | 45 | AVG | LOW | AVG | AVG | AVG |
| 0000130246 | THORN JON | 6 | 315 | 35 | 208 | 45 | AVG | AVG | AVG | AVG | LOW |

Table 5 (continued)

GRADE RANK ORDER GOAL REPORT FOR M.E.B. DEMONSTRATION CENTER GRADE 6 FALL 85 MATHEMATICS 07/23/86

| ID NUMBER | STUDENT NAME | GRD | TEST | RAW SCR | RIT SCR | POP SCR | +-X/WHOLE# | +-X/FR&DEC | GEOM/MEAS | GRPHS/STAT | WD/PBSOLV |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0000138496 | LASORDA ANN MARIE | 6 | 315 | 35 | 208 | 45 | AVG | AVG | AVG | AVG | LOW |
| 0000136033 | SHORES LEE | 6 | 314 | 45 | 208 | 45 | LOW | AVG | AVG | AVG | AVG |
| 0000138491 | WICKHAM JOHN | 6 | 313 | 50 | 206 | 43 | AVG | LOW | AVG | AVG | AVG |
| 0000138245 | MERIWETHER AGATHA | 6 | 315 | 32 | 205 | 42 | AVG | AVG | LOW | AVG | AVG |
| 0000128766 | PICKETT JOHN | 6 | 313 | 32 | 205 | 42 | AVG | LOW | AVG | AVG | AVG |
| 0000131114 | SMITH BEV | 6 | 315 | 31 | 204 | 42 | AVG | LOW | LOW | AVG | AVG |
| 0000127498 | MILLER ADA | 6 | 313 | 49 | 204 | 42 | AVG | AVG | AVG | LOW | LOW |
| 0000138199 | BARBEAU ANN MARIE | 6 | 314 | 41 | 203 | 41 | AVG | AVG | LOW | LOW | AVG |
| 0000136638 | BRANDON JACK | 6 | 315 | 28 | 202 | 40 | AVG | LOW | AVG | LOW | AVG |
| 0000138493 | TOMPKINS GEORGE | 6 | 314 | 39 | 201 | 39 | AVG | LOW | LOW | AVG | LOW |
| 0000145841 | SMOTHERS RIP | 6 | 313 | 47 | 200 | 38 | LOW | LOW | AVG | AVG | AVG |
| 0000133765 | COLE JACK | 6 | 314 | 37 | 199 | 38 | LOW | AVG | AVG | LOW | LOW |
| 0000137557 | CLARK JIM | 6 | 313 | 46 | 199 | 38 | LOW | LOW | AVG | LOW | AVG |
| 0000143393 | COLE LINDA | 6 | 314 | 28 | 191 | 31 | LOW | LOW | LOW | LOW | LOW |
| 0000136431 | WILLIAMS WILSON | 6 | 313 | 38 | 190 | 31 | LOW | LOW | LOW | LOW | LOW |
| 0000130259 | LARUE JULIE | 6 | 314 | 20 | 184 | 26 | LOW | LOW | LOW | LOW | LOW |
| 0000145840 | MERSHON ANDREA | 6 | 313 | 24 | 178 | 21 | LOW | LOW | LOW | LOW | LOW |
| 0000131308 | POWELL DIANA | 6 | ABSENT OR INVALID | | | | | | | | |
| NUMBER OF STUDENTS | | | | | 63 | 63 | 63 | 63 | 63 | 63 | 63 |
| AVERAGES | | | | | 216.6 | 51.4 | 219.7 | 214.7 | 217.1 | 215.3 | 217.3 |
| STANDARD DEVIATION | | | | | 14.5 | 11.3 | 16.4 | 15.4 | 16.6 | 17.9 | 16.5 |
| NUMBER ABOVE AVERAGE | | | | | 18 | 22 | 22 | 16 | 14 | 14 | 14 |
| NUMBER AVERAGE | | | | | 36 | 33 | 33 | 33 | 39 | 39 | 39 |
| NUMBER BELOW AVERAGE | | | | | 9 | 8 | 8 | 14 | 10 | 10 | 10 |

* Student score is outside the valid range for this test.

Table 6

THREE POINTS IN TIME GOAL REPORT FOR M.E.B. DEMONSTRATION CENTER 07/23/86

COURSE - 6236 / 3 TEACHER - EIDEN SUBJECT - READING CLASS ALPHABETIC REPORT

| ID NUMBER | STUDENT NAME | GRD | RIT SCORES F85 | S85 | F84 | POP SCORES F85 | S85 | F84 | WORD MNG | | | LIT COMP | | | INT COMP | | | EVAL COMP | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0000138427 | ANDERSON DIANA | 6 | 224 | 219 | 221 | 57 | 56 | 59 | H | H | A | A | A | H | A | A | H | A | A | H |
| 0000138478 | BARTLETT CLIFF | 6 | 219 | 221 | 210 | 54 | 58 | 51 | A | A | A | A | H | A | A | H | A | A | A | H |
| 0000138489 | BOMMER KAREN | 6 | 216 | 221 | 214 | 51 | 58 | 54 | A | H | A | A | A | A | A | A | H | A | A | A |
| 0000137557 | CLARK JIM | 6 | 219 | 215 | 211 | 54 | 53 | 52 | A | H | A | A | A | A | A | A | A | A | N | A |
| 0000133765 | COLE JACK | 6 | 196 | 193 | 201 | 36 | 36 | 44 | L | L | A | A | A | A | L | A | A | L | L | L |
| 0000138373 | DOHERTY MAXINE | 6 | 230 | 237 | 228 | 62 | 70 | 65 | H | H | H | H | H | A | H | H | H | H | H | H |
| 0000138484 | DVORAK JAY | 6 | 216 | 216 | 207 | 51 | 54 | 48 | A | H | A | A | H | A | A | A | A | A | N | A |
| 0000137261 | HANSEN LEE | 6 | 212 | 213 | 207 | 48 | 52 | 48 | A | A | A | A | H | A | A | A | A | A | A | H |
| 0000144300 | JENNER JANE | 6 | 216 | 213 | 213* | 51 | 52 | 53 | A | H | A | A | A | A | A | A | A | A | N | A |
| 0000128782 | JOHNSON HENRY | 6 | 205 | 0 | 0 | 43 | 0 | 0 | L | - | - | A | - | - | A | - | - | A | - | - |
| 0000138322 | KIEFERT HARRY | 6 | 227 | 219 | 214 | 60 | 56 | 54 | H | A | A | A | H | A | A | A | A | H | H | A |
| 0000130239 | LARUE JULIE | 6 | 189 | 197 | 200 | 31 | 39 | 43 | L | A | A | L | L | A | L | A | A | L | A | A |
| 0000133677 | LASORDA GLORIA | 6 | 211 | 213 | 214 | 47 | 52 | 54 | A | A | H | A | A | A | A | A | A | A | N | H |
| 0000129681 | NEWSOME PETER | 6 | 223 | 223 | 0 | 58 | 59 | 0 | H | A | - | A | A | - | H | H | - | A | A | - |
| 0000138493 | OTTINGER ESTHER | 6 | 227 | 223 | 213 | 60 | 59 | 53 | H | H | A | A | H | A | A | A | A | A | A | A |
| 0000137933 | PETERSON WILSON | 6 | 215 | 213 | 210 | 50 | 52 | 51 | A | A | A | A | A | A | A | A | A | A | A | H |
| 0000138440 | RUTKIN KAREN | 6 | 239 | 227 | 232 | 69 | 63 | 68 | H | A | H | H | H | H | H | H | H | H | H | H |
| 0000136033 | SHORES LEE | 6 | 213 | 211 | 213 | 50 | 50 | 53 | A | A | A | A | A | A | A | A | A | A | A | H |
| 0000137242 | SMOTHERS RICHARD | 6 | 208 | 196 | 190 | 45 | 38 | 35 | A | A | A | A | A | L | A | L | L | A | L | L |
| 0000137247 | STEINER GEORGE | 6 | 221 | 217 | 213 | 55 | 55 | 53 | A | A | A | A | A | A | A | A | A | A | A | H |
| 0000138481 | STOCKMAN JACK | 6 | 227 | 226 | 221 | 60 | 62 | 59 | H | H | H | H | H | A | A | H | A | A | H | H |
| 0000138461 | TARDIFF MARY | 6 | 218 | 212 | 211 | 53 | 51 | 52 | A | A | A | A | A | A | A | A | A | H | A | A |
| 0000130246 | THORN JON | 6 | 226 | 230 | 208 | 59 | 65 | 49 | A | H | A | A | H | A | A | H | A | H | L | A |
| 0000137257 | WALTERS ALLAN | 6 | 230 | 223 | 217 | 62 | 59 | 56 | H | H | A | H | H | H | A | A | H | A | A | A |
| AVERAGES | | | 218 | 216 | 212 | 53 | 54 | 52 | | | | | | | | | | | | |
| NUMBER HIGH | | | 6 | 4 | 2 | | | | 8 | 10 | 4 | 4 | 10 | 3 | 3 | 6 | 5 | 3 | 4 | 10 |
| NUMBER AVERAGE | | | 16 | 16 | 19 | | | | 13 | 12 | 18 | 19 | 12 | 18 | 19 | 16 | 16 | 17 | 12 | 10 |
| NUMBER LOW | | | 2 | 3 | 1 | | | | 3 | 1 | 0 | 1 | 1 | 1 | 2 | 1 | 1 | 2 | 3 | 2 |

* Student score is outside the valid range for this test.

Table 7

M.E.B. DEMONSTRATION CENTER -- INDIVIDUAL STUDENT REPORT 07/23/86

STUDENT - BARBEAU ANN MARIE ID NUMBER - 0000138199

LANGUAGE

| DATE | GRADE | TEST | RAW | RIT | POP | STRUCTURE | GRAMMAR | PUNCTUATE | CAPITALIZE | SPELL | EXPRESSION |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 10/85 | 6 | 323 | 38 | 196 | 37 | LOW | LOW | AVG | AVG | LOW | LOW |
| 4/85 | 5 | 323 | 41 | 198 | 41 | LOW | AVG | AVG | LOW | AVG | AVG |
| 10/84 | 5 | 123 | 32 | 192 | 38 | AVG | LOW | LOW | AVG | AVG | LOW |
| 6/84 | 4 | 223 | 38 | 200 | 48 | AVG | AVG | AVG | AVG | AVG | AVG |
| 10/83 | 4 | 999 | 99 | 192 | 45 | NT | NT | NT | NT | NT | NT |

MATHEMATICS

| DATE | GRADE | TEST | RAW | RIT | POP | +-X/WHOLE# | +-X/FR&DEC | GEOM/MEAS | GRPHS/STAT | WD/PBSOLV |
|---|---|---|---|---|---|---|---|---|---|---|
| 10/85 | 6 | 314 | 41 | 203 | 41 | AVG | AVG | LOW | LOW | AVG |
| 4/85 | 5 | 314 | 38 | 199 | 41 | AVG | AVG | LOW | AVG | LOW |
| 10/84 | 5 | 134 | 29 | 193 | 41 | AVG | NT | AVG | AVG | LOW |
| 6/84 | 4 | 233 | 37 | 196 | 44 | AVG | NT | LOW | AVG | AVG |
| 10/83 | 4 | 999 | 99 | 180 | 39 | NT | NT | NT | NT | NT |

READING

| DATE | GRADE | TEST | RAW | RIT | POP | WORD ANAL | LIT COMP | INT COMP | EVAL COMP |
|---|---|---|---|---|---|---|---|---|---|
| 10/85 | 6 | 303 | 32 | 199 | 38 | AVG | LOW | LOW | LOW |
| 4/85 | 5 | 303 | 23 | 188 | 32 | AVG | LOW | LOW | LOW |
| 10/84 | 5 | 103 | 21 | 185 | 32 | LOW | AVG | LOW | LOW |
| 10/83 | 4 | 999 | 99 | 187 | 41 | NT | NT | NT | NT |

Figure 1

# Portland Public Schools Achievement Gains

## Fall to Spring, 1982–86, compared to 1980–81 Baseline

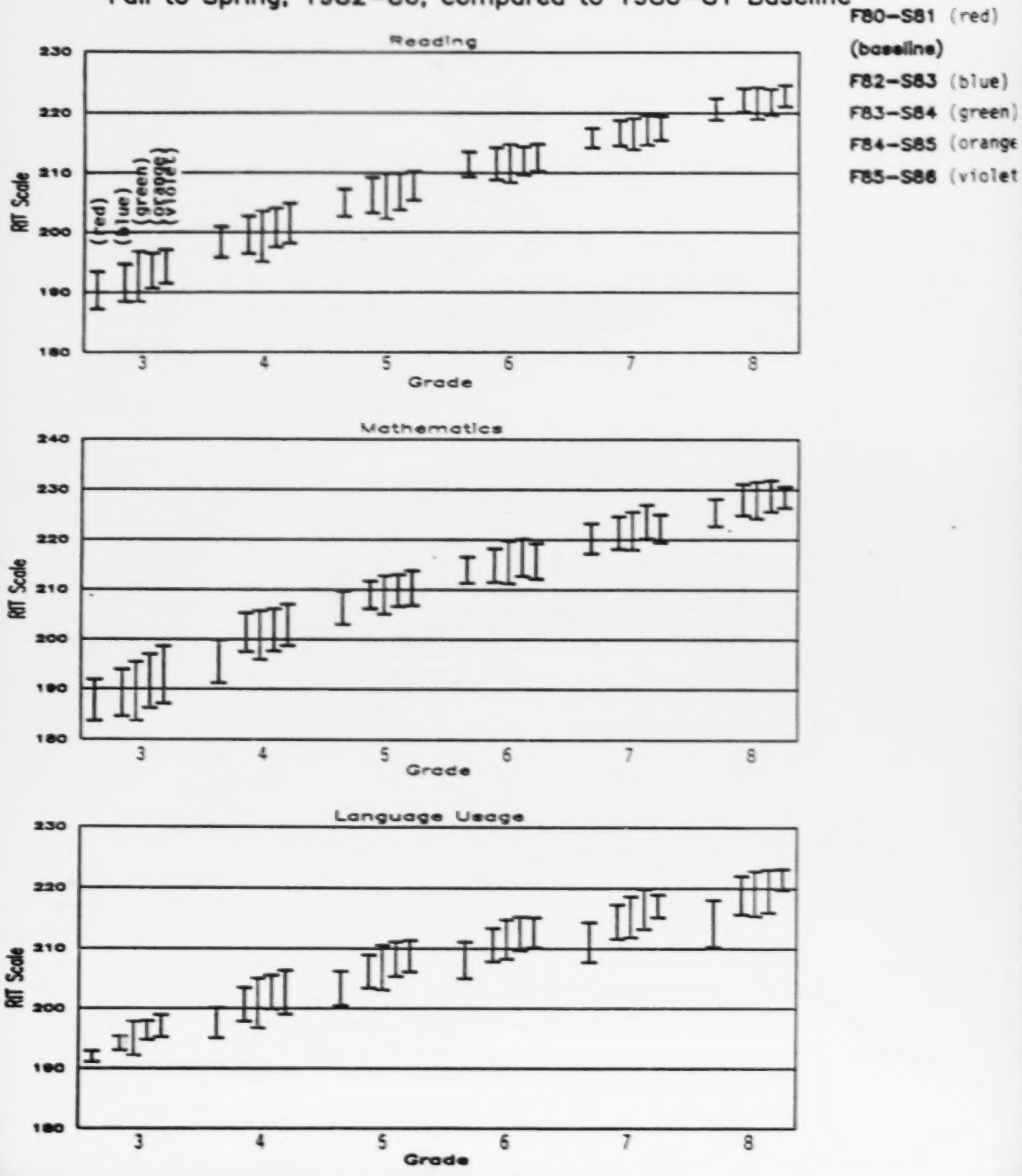


Figure 2
School Achievement Plot

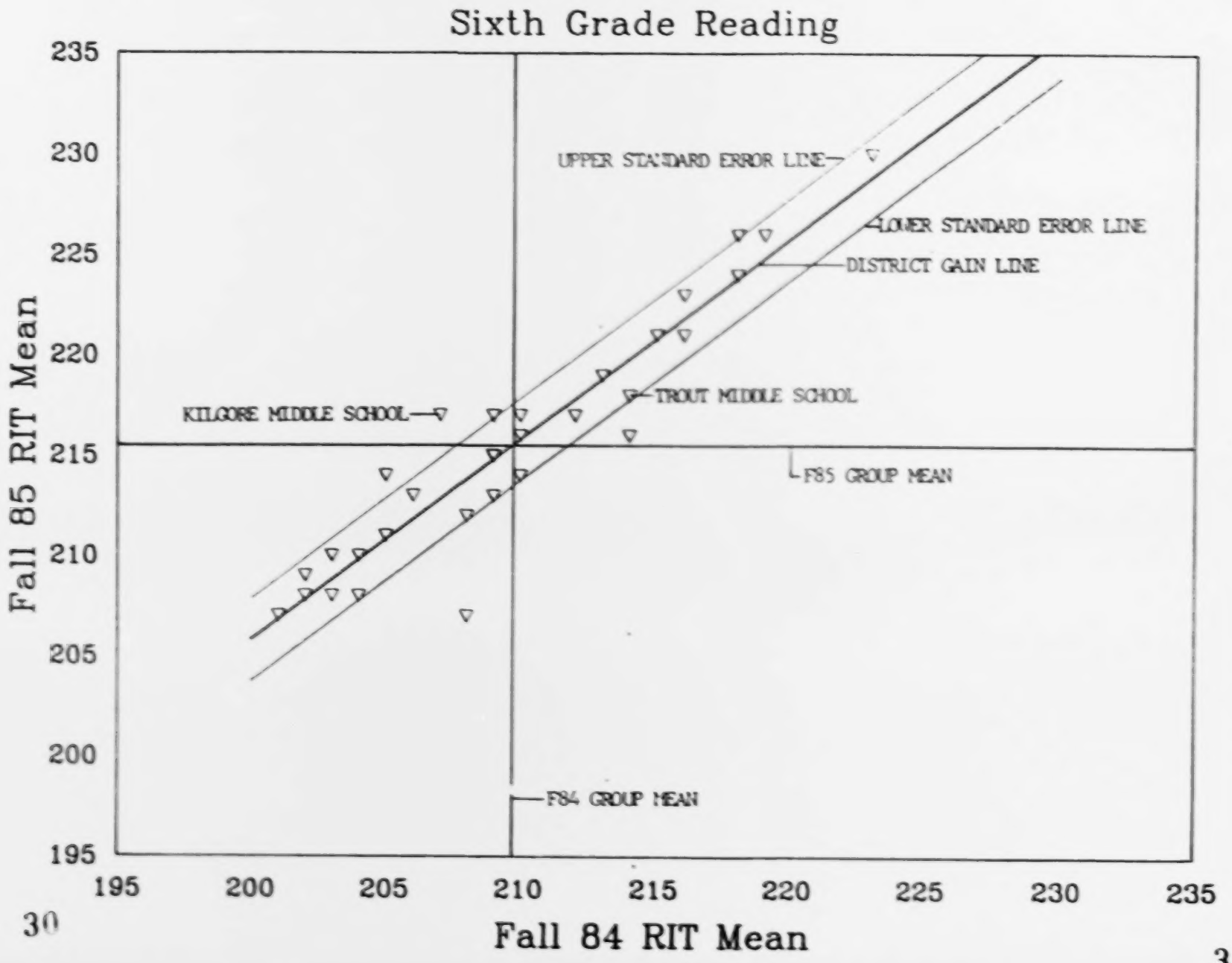


Figure 3

# Trout Middle Achievement Gains

**Fall to Spring, 1982–86, compared to 1980–81 Baseline**

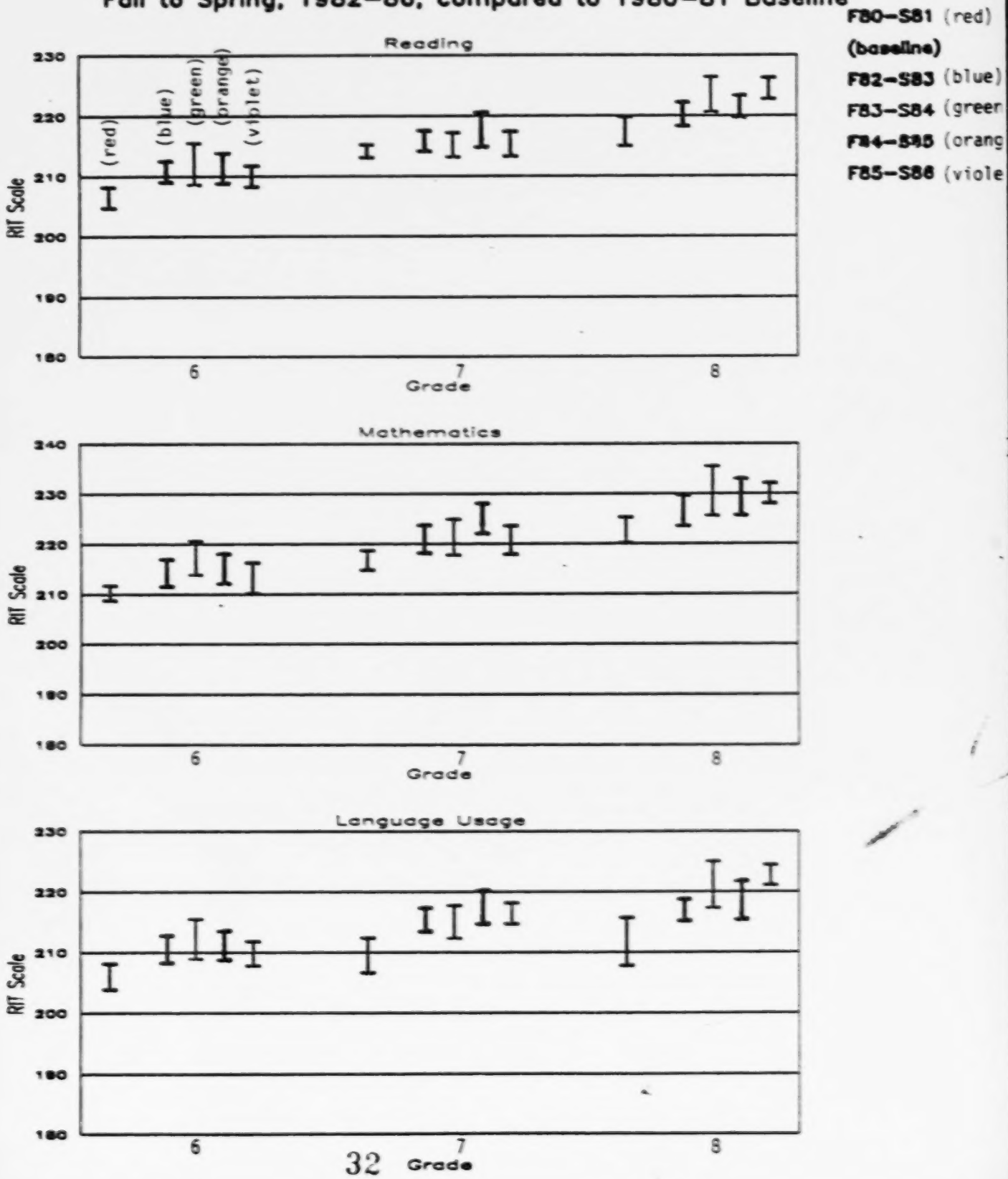
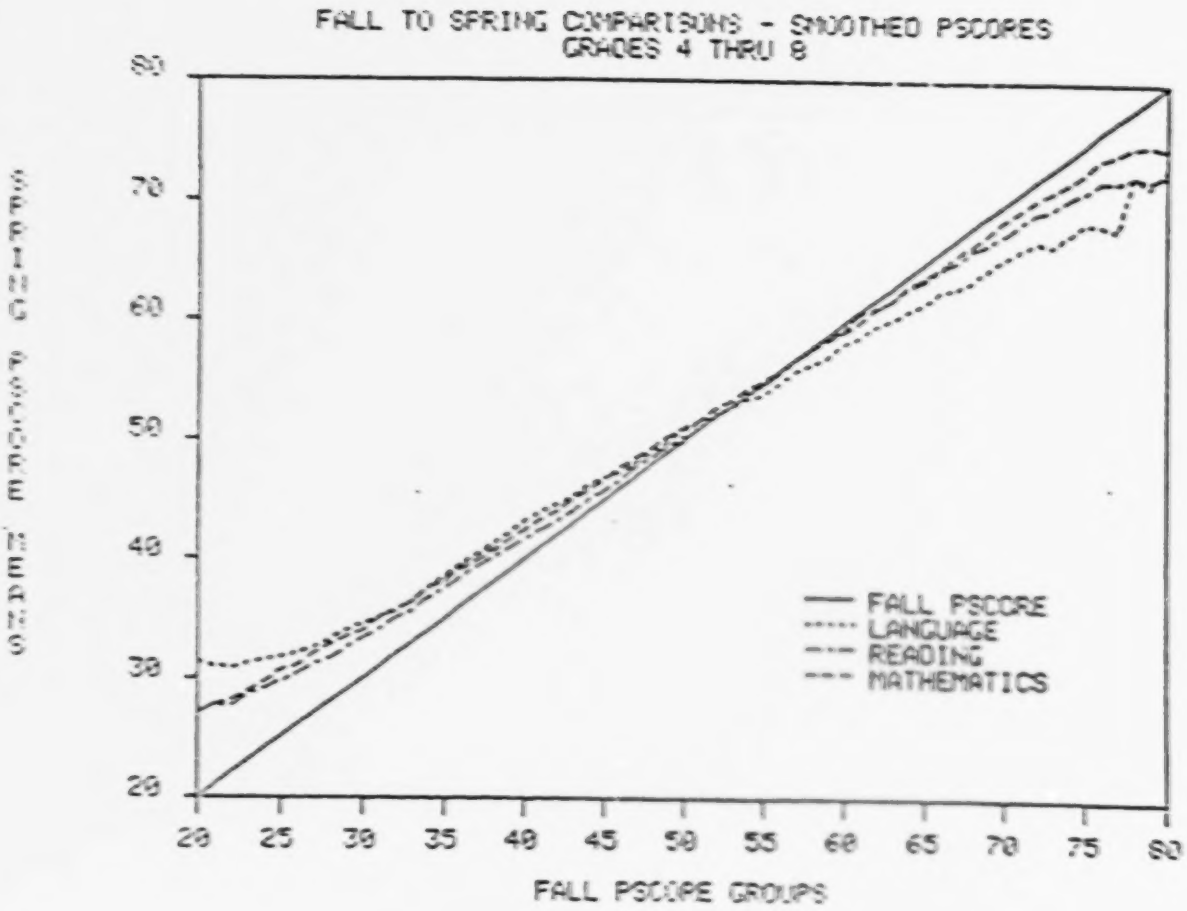


Figure 4




Combines data for 78-79, 79-80, 80-81